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An Analysis of the Renewable Energy Industry: Lagging Indicators in the Legal, Infrastructural, and Economic Forces

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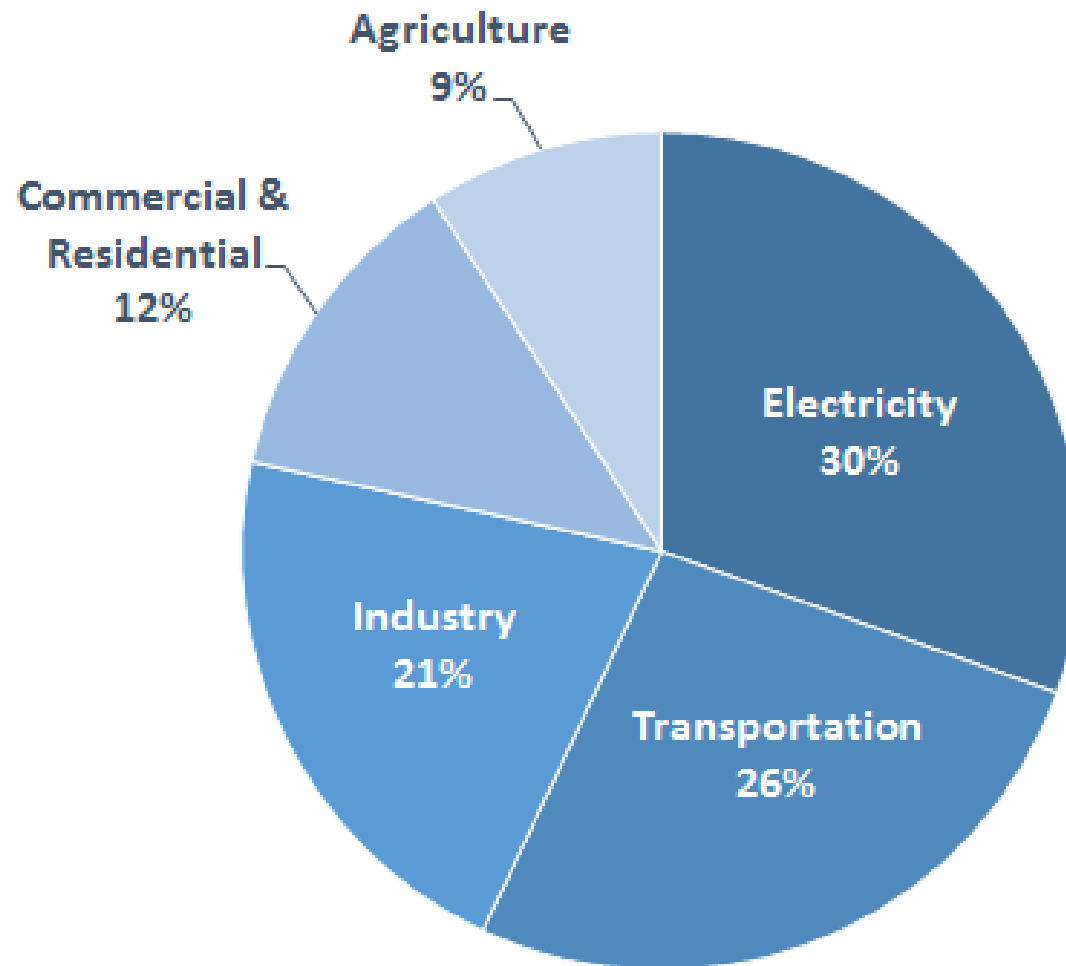
An Analysis of the Renewable Energy Industry: Lagging Indicators in the Economic, Legal, & Infrastructural Forces

A PRESENTATION BY ALINA SIGITOVA

The Problem

- Renewable Energy is an industry with a lot of potential
 - 2000-2009 was the hottest decade in the history of the Earth
 - Until 1950, carbon dioxide levels rose by 11%; they now rise by 45%
 - Sea levels have risen by 7% in the last 100 years; this is more than the last 2,000 years combined
 - 56% of consumers say that environment should be given protection, even at the expense of economic development
 - The major cause of this huge environment impact is the way we consume energy, primarily through fossil fuels

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2014



“Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2014”, EPA study



Electricity

67%

Transportation

90%

Industry

Nearly All

Enter the solution: Renewable Energy

“...Energy that is generated from natural processes that are continuously replenished. This includes sunlight, geothermal heat, wind, tides, water, and various forms of biomass. This energy cannot be exhausted and is constantly renewed.”

*-Daniel Ciolkosz
Assistant Professor at
Penn State Agricultural Science & Research*




How effective is Renewable Energy?

87% less emissions

What is the usage rate?

9.9% of all energy



Big Question:
Why isn't the industry dominating?

Reason 1: Economic

- Government Subsidization
 - 4 times more for fossil fuels than renewable energy
 - Fossil fuel subsidization world-wide is equal to 6.5% of world GDP
 - Fossil fuel subsidization = secure, long-term, written into tax codes
 - Renewable Energy subsidization = short-lived, instable, not permanent
- Market Ideology
 - Free market ideals
 - Fossil fuels took centuries to develop, had large subsidization help, & initially started as monopolies

Reason 2: Legal

- Structure of United States (State's Rights)
 - States govern themselves on energy consumption
 - More bureaucracy; 50 different policies to follow rather than one
- No enforceable federal plan
 - U.S. publishes a plan every 2 years for energy development; this is not a binding document, unlike EU's plan
- Changing Policies
 - Policies change term-to-term & administration-to-administration
 - Focus on different aspects, but not enough time invested in one

Reason 3: Infrastructural

- Grid & Logistical Incompatibility
 - Current grid is unable to be compatible with the fluctuating energy of most renewable energies
 - This causes waste, inefficacy, and added labor costs
- Land Limitations
 - Solar & wind both take a lot of space to produce energy
 - Meet energy needs of 2050:
 - 22% bigger than Massachusetts for solar
 - 633% for wind turbines
- Infrastructure Policies
 - More costly & extensive than fossil fuel permits



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Conclusion?

While important, there are several external factors that need to be solved first.

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